

Haleh Mohammadian



hmohammadian@ucdavis.edu
https://halehossadat.github.io/
2306 Academic Surge
Davis, CA, 95616

EDUCATION

- **University of California, Davis** Davis, USA
Doctoral of Computer Science and Information Sciences *Jan 2023 - present*
- **Sharif University of Technology** Tehran, Iran
Master of Computer Science - Scientific Computing *Sep 2016 - Sep 2019*
 - **Thesis:** 3D Reconstruction and Extrinsic Parameters Calibration of Non-Overlapping Cameras
- **University of Isfahan** Isfahan, Iran
Bachelor of Computer Science *Sep 2012 - Jul 2016*
 - **Final Project Title:** Chebfun Softwares
 - **Class rank** 1
 - **GPA:** 18.36/20.00

RESEARCH EXPERIENCE

- **Graduate Researcher** Davis, USA
Marcu Laboratory *Jan 2024 - Present*
University of California, Davis
 - Applying physics-based simulations on tissue deformation
 - Working on image registrations for DaVinci robot surgery using real patients data
 - Supervision of **Prof. Julian Panetta** at University of California, Davis, USA.
 - Co-supervision of **Prof. Laura Marcu** at University of California, Davis, USA.
- **Graduate Researcher** Davis, USA
Computational Fabrication Group *Jan 2023 - Present*
University of California, Davis
 - Part of MeshFEM software development
 - C++ codebase for finite element simulations on triangular and tetrahedral elements
 - Supervision of **Prof. Julian Panetta** at University of California, Davis, USA.
 - Focus on contact problem and dynamic simulation
- **Guest Researcher** Saarbrücken, Germany
Artificial Intelligence aided Design and Manufacturing Group, *Oct 2020 - May 2022*
Max Planck Institute for Informatics
 - New computational method for designing geometries with structured release profile
 - Supervision of **Dr. Vahid Babaei**
 - Collaboration of **Prof. Julian Panetta** at University of California, Davis, USA.
 - Physics-based simulation of dissolution process
 - Inverse design using nonlinear topology optimizations and adjoint methods
 - Measure release profile of dissolution process using novel capture system
 - Evaluate method with real data experiments
 - Fabrication using fused deposition modeling 3D printers
 - This project was published in ACM Transactions on Graphics
 - This project was presented in ACM SIGGRAPH ASIA 2022
 - It was submitted for US patent

Internship

Singapore, Singapore
July 2018 - March 2019

- *Computer Vision and Robotic Perception*
National University of Singapore
 - Novel method for calibrating extrinsic parameters of non-overlapping cameras
 - Supervision of **Prof. Gim Hee Lee**
 - Formulate problem using light and shadow geometry as structure from motion problem
 - Bundle adjustment as solving nonlinear least square problem using Google Ceres
 - Evaluate method with synthetic data and real experiments
 - This project is published as part of my master thesis

TEACHING EXPERIENCE

Teaching Assistant

- *Software development and object oriented programming in C++* *Fall quarter 2023*
University of California, Davis
 - Teach undergraduate students C++ programming language in discussion sessions
 - Hold office hours, and grade more than seventy students midterms

Teaching Assistant

- *Numerical Linear Algebra Matlab Course* *2015*
University of Isfahan
 - Teach undergraduate students MATLAB programming language
 - Implementing numerical algebraic algorithms

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, MATLAB, LaTeX
- **Operating Systems:** Linux
- **3D CAD Softwares:** OpenSCAD
- **Version Control Systems:** Git

RESEARCH INTERESTS

- Computer Graphics
- Physics-based Simulation
- Inverse Design
- Computational Fabrication
- Numerical Analysis

VOLUNTEERING

- SIGGRAPH 2023, Los Angeles, CA

PUBLICATIONS

- Shape from Release: Inverse Design and Fabrication of Controlled Release Structures. Julian Panetta, **Haleh Mohammadian**, Emiliano Luci, Vahid Babaei, ACM Transactions on Graphics (ACM SIGGRAPH ASIA, 2022).

PATENTS

- US Patent, 63/413016, Oct.04.2022

AWARDS

- Awarded competitive UC Davis Graduate Studies Summer fellowship for 2024 summer 2024
- Awarded UC Davis C.S department Ph.D. fellowship for the first year 2023
- Accepted in M.Sc Program without Entrance Exam as an Exceptional Talents 2016
- Ranked 1st among B.Sc graduates in Computer Science at University of Isfahan 2016
- Rank 3rd in IUT RaadCup, Junior Soccer League 2010
- Qualification in RoboCup IranOpen, Junior Soccer and Rescue League 2009
- Accepted in National Organization for Development of Exceptional Talent high school 2007